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JONES DAY
555 WEST FIFTH STREET, SUITE 4600
LOS ANGELES, CA 90013-1025

EXAMINER	
HO, ALLEN C	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/600,629	CARVER ET AL.	
	Examiner	Art Unit	
	Allen C. Ho	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *35-41* is/are allowed.

6)☒ Claim(s) *1-24,26-34,48-50 and 52-54* is/are rejected.

7)☒ Claim(s) *25,42-47 and 51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "30" has been used to designate both a threaded portion in Fig. 2 and a v-wheel in Fig. 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "32" has been used to designate both a threaded foot in Fig. 2 and a track in Fig. 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 44. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the locking mechanism claimed in claim 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

(1) Page 30, line 16, "32" should be replaced by --30--.

(2) Page 38, line 3, "26" should be replaced by --12--.

Appropriate correction is required.

Claim Objections

6. Claims 20-24 are objected to because of the following informalities: Claims 20-24 recite the limitation "the frame". There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4, 6-14, 26, 30, 32, 33, 48, 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Armistead (U. S. Patent No. 5,638,420).

With regard to claim 1, Armistead disclosed a relocatable security inspection system, comprising: a frame (**27**) having first and second leg sections (**29**) spaced apart from one another, the frame defining an inspection area; an x-ray source (**13**) disposed on the frame; a detector (column 4, lines 1-2) disposed on the frame distally from the x-ray source; and an image processor (**17**).

With regard to claim 2, Armistead disclosed the system of claim 1, wherein the frame is movable along a dimension of the object.

With regard to claims 3 and 4, Armistead disclosed the system of claim 2, further comprising a self-propelling drive attached to the frame for moving the frame (column 4, lines 8-11).

With regard to claims 6 and 7, Armistead disclosed the system of claim 2, further comprising a plurality of wheel (**25**) disposed on the first and second leg sections for providing rolling movement to the frame.

With regard to claim 8, Armistead disclosed the system of claim 1, wherein the first and second leg sections each include a base portion (**25**) configured to rest on a surface and maintain the frame in a stationary position during imaging of a moving object.

With regard to claim 9, Armistead disclosed the system of claim 1, further comprising a delivery vehicle (**11**) for deploying the frame to an imaging position.

With regard to claim 10, Armistead disclosed the system of claim 1, further comprising a radiation shield (**19**) attached to the frame.

With regard to claims 11 and 48, Armistead disclosed the system of claim 1, wherein the frame is collapsible (everything is collapsible given the right condition).

With regard to claim 12, Armistead disclosed the system of claim 1, wherein the x-ray source is disposed on one of the first and second leg sections.

With regard to claim 13, Armistead disclosed the system of claim 1, wherein the detector is disposed on at least one of the first and second leg sections and a support section that connects the first and second leg sections.

With regard to claim 14, Armistead disclosed the system of claim 1, further comprising an operator cabin (**21**).

With regard to claim 49, Armistead disclosed the system of claim 1, the frame further comprising a support section (**31**) that connects the first and second leg sections.

With regard to claim 26, Armistead disclosed a method of inspecting an object, comprising the steps of: deploying an x-ray imaging scanner (**13**) from a delivery vehicle (**11**) into an imaging position, wherein an inspection area is defined by the scanner; generating (column 4, lines 1-2) an x-ray beam from the scanner into the inspection area toward an object to

be imaged; detecting the x-ray beam after the x-ray beam passes through the object; producing an output signal representative of the object and contends thereof; and converting (**17**) the output signal into a visual image of the object and contends thereof.

With regard to claim 30, Armistead disclosed the method of claim 26, further comprising the step of moving (**25**) the scanner relative to the object to image the object.

With regard to claims 32 and 33, Armistead disclosed the method of claim 30, wherein the step of moving the scanner comprises self-propelling the scanner relative to the object (column 4, lines 8-11).

9. Claims 1-14, 26, 60, 31-33, and 48-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Kang *et al.* (U. S. Patent No. 6,563,903 B2).

With regard to claim 1, Kang *et al.* disclosed a relocatable security inspection system, comprising: a frame having first (**3**) and second (**5**) leg sections spaced apart from one another, the frame defining an inspection area; an x-ray source (**2**) disposed on the frame; a detector (**10-12**) disposed on the frame distally from the x-ray source; and an image processor (column 6, lines 62-64).

With regard to claim 2, Kang *et al.* disclosed the system of claim 1, wherein the frame is movable along a dimension of the object.

With regard to claims 3 and 4, Kang *et al.* disclosed the system of claim 2, further comprising a self-propelling drive (**9**) attached to the frame for moving the frame.

With regard to claim 5, Kang *et al.* disclosed the system of claim 2, further comprising a track (**8**) for guiding the frame, wherein at least one of the first and second leg sections includes a wheel (7) disposed thereon, the wheel movable along the track.

With regard to claims 6 and 7, Kang *et al.* disclosed the system of claim 2, further comprising a plurality of wheel (7) disposed on the first and second leg sections for providing rolling movement to the frame.

With regard to claim 8, Kang *et al.* disclosed the system of claim 1, wherein the first and second leg sections each include a base portion (7) configured to rest on a surface and maintain the frame in a stationary position during imaging of a moving object.

With regard to claim 9, Kang *et al.* disclosed the system of claim 1, further comprising a delivery vehicle (the inspection apparatus) for deploying the frame to an imaging position.

With regard to claim 10, Armistead disclosed the system of claim 1, further comprising a radiation shield attached to the frame (column 4, lines 40-46).

With regard to claims 11 and 48, Kang *et al.* disclosed the system of claim 1, wherein the frame is collapsible (broken down into individual modules, column 7, lines 12-18).

With regard to claim 12, Kang *et al.* disclosed the system of claim 1, wherein the x-ray source is disposed on one of the first and second leg sections.

With regard to claim 13, Kang *et al.* disclosed the system of claim 1, wherein the detector is disposed on at least one of the first and second leg sections and a support section that connects the first and second leg sections.

With regard to claim 14, Kang *et al.* disclosed the system of claim 1, further comprising an operator cabin (column 4, lines 32-36).

With regard to claim 49, Kang *et al.* disclosed the system of claim 1, the frame further comprising a support section (4) that connects the first and second leg sections.

With regard to claim 26, Kang *et al.* disclosed a method of inspecting an object, comprising the steps of: deploying an x-ray imaging scanner (**2**, **10**) from a delivery vehicle into an imaging position, wherein an inspection area is defined by the scanner; generating (**2**) an x-ray beam from the scanner into the inspection area toward an object to be imaged; detecting the x-ray beam after the x-ray beam passes through the object; producing an output signal representative of the object and contends thereof; and converting the output signal into a visual image of the object and contends thereof (column 6, lines 62-64).

With regard to claim 30, Kang *et al.* disclosed the method of claim 26, further comprising the step of moving (7) the scanner relative to the object to image the object.

With regard to claim 31, Kang *et al.* disclosed the method of claim 30, wherein the step of moving the scanner comprises moving the scanner along a track (**8**) that guides the scanner.

With regard to claims 32 and 33, Kang *et al.* disclosed the method of claim 30, wherein the step of moving the scanner comprises self-propelling (**9**) the scanner relative to the object.

With regard to claim 50, Kang *et al.* disclosed the method of claim 26, wherein the x-ray imaging scanner is collapsible (can be broken down), the deploying step further comprising transforming the x-ray imaging scanner from a collapsed position (disassembled) to the imaging position (assembled).

10. Claims 15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmström (U. S. Patent No. 6,435,715 B1).

With regard to claim 15, Holmström disclosed a relocatable security inspection system, comprising: a support beam section (7) having a first end and a second end; a first leg section (**9**) pivotally connected to the first end of the support beam section; a second leg section (**11**)

pivotally connected to the second end of the support beam section. Note: While features of an apparatus may be recited either structurally of functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP § 2114.

With regard to claim 17, Holmström disclosed the system of claim 15, further comprising an x-ray source (**1**) disposed on one of the first and second leg sections.

With regard to claims 18 and 19, Holmström disclosed the system of claim 17, further comprising a detector (**2**) disposed on at least one of the first and second leg sections and the support beam section.

11. Claims 15-20, 24, and 52-54 are rejected under 35 U.S.C. 102(e) as being anticipated by Betz *et al.* (U. S. Patent No. 6,435,715 B1).

With regard to claim 15, Betz *et al.* disclosed a relocatable security inspection system, comprising: a support beam section (**5**, **6**) having a first end and a second end; a first leg section (**4** or **7**) pivotally connected to the first end of the support beam section; a second leg section (**4** or **7**) pivotally connected to the second end of the support beam section. Note: While features of an apparatus may be recited either structurally of functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP § 2114.

With regard to claim 16, Betz *et al.* disclosed the system of claim 15, wherein the support beam section comprises two sub-sections (**5**, **6**) pivotally connected (**9**, **10**) to one another.

With regard to claim 17, Betz *et al.* disclosed the system of claim 15, further comprising an x-ray source (**1**) disposed on one of the first and second leg sections.

With regard to claims 18 and 19, Betz *et al.* disclosed the system of claim 17, further comprising a detector (**2**) disposed on at least one of the first and second leg sections and the support beam section.

With regard to claim 20, Betz *et al.* disclosed the system of claim 15, further comprising a self-propelling drive attached to at least one of the first and second leg sections (column 2, lines 34-37).

With regard to claim 24, Betz *et al.* disclosed the system of claim 15, wherein the first and second leg sections each include a base portion (**8**) configured to rest on a surface.

With regard to claim 52, Betz *et al.* disclosed the system of claim 15, wherein the first leg section and second leg section are detachable from the support beam (they are detachable since they are not an integral part of the support beam).

With regard to claim 53, Betz *et al.* disclosed the system of claim 15, wherein the first leg section and second leg section comprise telescoping members (column 2, lines 52-57).

With regard to claim 54, Betz *et al.* disclosed the system of claim 15, wherein the first leg section and second leg section are collapsible via hinges (**9**, **11**) located along their lengths.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betz *et al.* (U. S. Patent No. 6,435,715 B1) as applied to claim 15 above, and further in view of Siczek *et al.* (U. S. Patent No. 4,979,202).

With regard to claims 21-23, Betz *et al.* disclosed the system of claim 15. However, Betz *et al.* failed to teach that a wheel is disposed on at least one of the first and second leg sections for providing rolling movement.

Siczek *et al.* disclosed a relocatable inspection system that comprises a wheel (**15**) configured to roll along a track (**9**) that guides the inspection system. Siczek *et al.* taught that this configuration provides movement of the inspection system around a patient table.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide wheels and tracks to the leg sections, since a person would be motivated to position the inspection system around a patient table at predetermined locations.

14. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang *et al.* (U. S. Patent No. 6,563,903 B2) as applied to claim 26 above.

With regard to claims 27-29, Kang *et al.* disclosed the method of claim 26. However, although Kang *et al.* disclosed a method that comprises the step of moving the scanner relative to the object to image the object, Kang *et al.* failed to teach the step of moving the object through the inspection area while the scanner remains stationary.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to move the object through the inspection area while the scanner remains stationary, since a person would be motivated to choose a method (moving the object) that is equivalent to another (moving the scanner).

15. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Armistead (U. S. Patent No. 5,638,420) as applied to claim 30 above, and further in view of Swift *et al.* (U. S. Patent No. 5,764,683).

With regard to claim 34, Armistead disclosed the method of claim 30. However, Armistead failed to teach the step of x-ray imaging the object at a plurality of energy levels.

Swift *et al.* disclosed a method that separates different materials using different x-ray energies (column 4, lines 8-39). Swift *et al.* taught that materials with different atomic number (Z) could be differentiated using different x-ray energies.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to image the object at a plurality of x-ray energies, since a person would be motivated to identify a material based on the atomic number of the material.

16. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang *et al.* (U. S. Patent No. 6,563,903 B2) as applied to claim 30 above, and further in view of Swift *et al.* (U. S. Patent No. 5,764,683).

With regard to claim 34, Kang *et al.* disclosed the method of claim 30. However, Kang *et al.* failed to teach the step of x-ray imaging the object at a plurality of energy levels.

Swift *et al.* disclosed a method that separates different materials using different x-ray energies (column 4, lines 8-39). Swift *et al.* taught that materials with different atomic number (Z) could be differentiated using different x-ray energies.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to image the object at a plurality of x-ray energies, since a person would be motivated to identify a material based on the atomic number of the material.

Allowable Subject Matter

17. Claims 35-41 are allowed.

18. Claims 25, 42-47, and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claims 35-38, the prior art fails to teach or fairly suggest a method of deploying a security inspection system from a delivery vehicle to an inspection site, the inspection system including a frame having first and second leg sections pivotally connected to opposite ends of an support beam section, comprising the steps of inclining a bed section of the delivery vehicle until a base portion of at least one of the first and second leg sections comes into contact with at least one of a surface of the inspection site and an object located on the surface of the inspection site and detaching the frame from the bed section of the delivery vehicle such that the frame comes to rest in a substantially upright position on the surface of the inspection site as claimed in claim 35.

With regard to claims 39-41, the prior art fails to teach or fairly suggest a method of deploying a security inspection system from a delivery vehicle to an inspection site, the inspection system including a frame having first and second leg sections pivotally connected to opposite ends of a support beam section, the support beam section comprising first and second scanner segments pivotally connected to one another, the method comprising the steps of moving the first and second leg sections away from one another via the deployment mechanism such that

the support beam section pivots into an imaging position in which the first and second scanner segments are locked into place substantially linear to one another and substantially perpendicular to the first and second leg sections, inclining a bed section of the delivery vehicle until a base portion of at least one of the first and second leg sections comes into contact with at least one of a surface of the inspection site and an object located on the surface of the inspection site, and detaching the frame from the bed section of the delivery vehicle such that the frame comes to rest in a substantially upright position on the surface of the inspection site as claimed in claim 39.

With regard to claims 42-46, although the prior art discloses a relocatable security inspection system comprising a light source and a light sensor, the prior art fails to teach or fairly suggest a processor that provides instructions to the frame to correct its path of travel based on information from the light sensor as claimed in claim 42.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(1) Bernardi *et al.* (U. S. Patent No. 6,785,357 B2) disclosed a high energy x-ray mobile cargo inspection system.

(2) Mun *et al.* (U. S. Patent No. 6,456,684 B1) disclosed a surgical scanning system comprising an alignment system.

(3) Bjorkholm (U. S. Patent No. 6,301,326 B2) disclosed a sheet detection system.

(4) Eiler (U. S. Patent No. 6,058,158) disclosed an x-ray device for checking the contents of closed cargo carriers.

(5) Geus *et al.* (U. S. Patent No. 5,692,028) disclosed an x-ray examination apparatus for large-volume goods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Allen C. Ho

Allen C. Ho
Patent Examiner
Art Unit 2882

04 December 2004